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EXAMINER	
DAGER, JONATHAN M	

ART UNIT	PAPER NUMBER
3663	

NOTIFICATION DATE	DELIVERY MODE
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary	Application No. 10/534,982	Applicant(s) TAFFIN, CHRISTIAN	
	Examiner JONATHAN M. DAGER	**Art Unit** 3663	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *09 July 2010*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1 and 3-15* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1 and 3-15* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Response to Arguments

1. Applicant's arguments, see page 7 filed 09 July 2010, with respect to the objection of claim 9 under 37 CFR 1.75 (c) have been fully considered and are persuasive due to amendment. Therefore, the objection of claim 9 under 37 CFR 1.75 (c) has been withdrawn.

2. Applicant's arguments, see pages 7-9 filed 09 July 2010, with respect to the rejection of claims 1, 8, and 9 under 35 U.S.C. 103(a) have been fully considered and are persuasive due to amendment. Therefore, the rejection of claims 1, 8, and 9 under 35 U.S.C. 103(a) has been withdrawn.

Subsequently, the prior art rejections of all claims dependent therefrom are withdrawn.

However, upon further consideration, new grounds of rejection are warranted (see below).

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3a. Claims 1 and 3-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bellinger (US 2001/0016795), and further in view of Kawano (US 5,129,475).

Regarding claims 1, 7-10, and 15, Bellinger discloses a vehicle deceleration invention in which the vehicle includes engine 14 is operatively connected to a transmission 16 which is, in turn, operatively connected to a propeller shaft, or tailshaft, 18, wherein the engine 14 drives tailshaft 18 via any of a number of selectable gear ratios of transmission 16 as is known in the art. As it relates to the present invention, transmission 16 may be a fully automatic or semi-automatic transmission having a number of automatically selectable gear ratios (para 0027).

Thus, Bellinger discloses a method for control of an automatic transmission of a vehicle provided with an engine that drives a transmission.

Bellinger discloses that the vehicle may include an inclinometer (not shown) or other known device operable to detect the slope or grade of the road being traveled, and provide a slope signal to control computer 12 corresponding thereto. In this embodiment, control computer 12 is operable to determine that a runaway vehicle condition exists if the slope signal indicates a negative grade greater than some predefined grade or slope value (para 0044).

Thus, the control computer is configured for detecting a downhill situation of the vehicle on which the vehicle is traveling is greater than a predetermined threshold.

Bellinger discloses wherein the torque request signal is typically provided via manual actuation of an accelerator pedal (not shown) under manual fueling control or via a desired speed setting of cruise control unit 56 under cruise control operation, to produce one or more fueling signals on signal path 40. The fuel system 38 is responsive to the one or more fueling signals to supply fuel to engine 14 as is known in the art (para 0031).

Thus, it is disclosed determining the power demand of the engine by the electronic unit.

Bellinger discloses that in an alternate embodiment, control computer 12 is operable to determine TS as a driver requested speed provided thereto via cruise control unit 56, interface/monitor 70 or other operator input means. For example, control computer 12 may be operable to determine TS as the set speed of cruise control unit 56 if cruise control unit 56 is active (para 0047). There also exist other conditions where it would be desirable to provide for a controlled descent down a negative grade at an engine/vehicle speed that is different from current engine/vehicle speed conditions. As a specific example, a vehicle operator may crest a steep downhill grade at a first vehicle speed (e.g. 55 mph), and desire to descend the grade at a lesser second vehicle speed (e.g. 40 mph) due to current weather conditions, changing speed limit restrictions or the like (para 0005). In yet another alternative embodiment, control computer 12 is operable to determine TS as a function of present vehicle location. In this embodiment, memory 15 has stored therein, or has access to, target speed values corresponding to vehicle location. Control computer 12 is accordingly operable at step 104 to determine present vehicle location, as described hereinabove, and determine from memory 15 or from information provided thereto from a remote source a target speed value corresponding to present vehicle location (para 0048).

Thus, it is disclosed setting a target speed (TS) for the vehicle in a conventional cruise control system; the target speed influenced by user defined parameters in certain situations. For example, the user can set the cruise control for a certain TS, and have the TS altered in response to a determined position on a downward sloping hill. Therefore, it is disclosed detecting the current position (top of hill as determined by the GPS), and retrieving the desired TS for traversing the hill from the system storage.

Referring now to FIG. 4B, control computer 12 is operable at step 122 to determine whether CS is decreasing. If not, algorithm execution continues at step 124 where control computer 12 is operable to determine whether the current engine or vehicle speed CS is less than the target speed TS. If not, algorithm execution continues at step 126 where control computer 12 is operable to determine whether CS is greater than the target speed TS. If not, control computer is operable to monitor CS at step 128 and determine whether CS is decreasing or increasing at steps 130 and 132. As long as CS remains constant, algorithm execution will loop between the "no" branch of step 132 and step 128. If, however, control computer determines either at step 126 or at step 132 that CS is increasing, algorithm execution continues at step 162 (FIG. 4C). If, on the other hand, control computer 12 determines at step 122 or step 130 that CS is decreasing, or if control computer 12 determines at step 124 that CS is less than TS, algorithm execution continues at step 134 (para 0052). If, however, control computer 12 determines at step 168 that CS is still increasing, algorithm execution loops back to step 162 for a further increase in boost pressure if boost pressure is not at its maximum controllable value. In one embodiment of algorithm 100, control computer 12 is operable at step 164 to incrementally increase the setting of wastegate 34 to thereby incrementally increase the turbocharger boost pressure (i.e. control wastegate to the next higher boost pressure setting). However, the present invention contemplates that control computer 12 may alternatively be operable at step 164 to increase the turbocharger boost pressure via control of wastegate 34 by any desired amount (para 0059).

In any case, if control computer 12 determines at step 162 that wastegate 34 is set such that turbocharger boost pressure is at its maximum value, algorithm execution continues at step 170 where control computer 12 determines whether the engine brake unit 42 is currently set for

maximum engine torque retarding capacity. If not, control computer 12 is operable at steps 172-178 to control wastegate 34 to thereby set turbocharger boost pressure to its minimum controllable pressure, control engine brake unit 42 to increase the engine torque retarding capacity thereof, monitor CS and determine whether CS is still increasing. If not, algorithm execution loops from step 178 back to step 122. If, however, control computer 12 determines at step 178 that CS is still increasing, algorithm execution loops back to step 162. In one embodiment of algorithm 100, control computer 12 is operable at step 174 to incrementally increase the torque retarding capacity of engine brake unit 42 (i.e. control unit 42 to the next higher brake setting). However, the present invention contemplates that control computer 12 may alternatively be operable at step 174 to increase the torque retarding capacity of unit 42 by any desired amount (para 0060).

Thus, it is disclosed in a vehicle cruise control method and system that during a downhill situation, comparing the current vehicle speed (CS) to the to the target speed determined from the cruise control/stored position, and based on the comparing downshift the transmission to a target gear ratio. This will produce an engine braking effect (engine absorbs energy). Further, the combined citations discloses that if the CS still exceeds the TS via engine braking, the transmission is downshifted again due to the engine being incapable of absorbing the energy at the current gear ratio.

Bellinger discloses a cruise control system adapted for use in a downhill traveling situation. While it might be well known feature of vehicle cruise control that there should be little or no deflection of the vehicle input pedals to maintain the vehicle in cruise control mode, it is not explicitly disclosed by Bellinger.

Kawano teaches a vehicle cruise control method and system wherein a case in which the resume switch 8 is turned on while the vehicle is running down a gentle slope (gradient): 5%) so that the vehicle speed is returned to a target speed of 40 km/hr from 100 km/hr. The P control for constant acceleration is executed between the time t40 at which the resume switch 8 is turned on and the time t41 at which the vehicle speed deviation .DELTA.Vk between the target vehicle speed VO and the vehicle speed V falls within the range .DELTA.VKP, and the PID control is executed between the time t41 and the time t42. After the time t42, the fuzzy control is executed (column 15 lines 42-52).

Kawano teaches that to reliably ensure safety, the control action executed by the above cruise control device is interrupted simultaneously with an operation of the transmission or the brake pedal of the vehicle, otherwise, the acceleration or deceleration of the vehicle would be disabled even if the driver depresses the accelerator pedal after operating the shift lever of the transmission or depresses the brake pedal, thus making it impossible to avoid an urgent danger during cruising (column 2 lines13-22).

Thus, Kawano teaches that manipulation of the driving inputs will prohibit the cruise control method on a negative gradient from engaging.

Bellinger has disclosed a base invention which is capable of all functions of the claimed embodiments, including detecting an activation of cruise control, and automatic deceleration control in a vehicle in response to the traveling situation. Where Bellinger could be deficient, with respect to claim 1 is that Bellinger does not explicitly disclose the known facet of cruise control wherein insuring deflection of the pedals is below a predetermined threshold. Kawano cures the deficiency.

Thus, since both inventions both disclose/teach similar elements and usage, it would have been obvious to one of ordinary skill in the art at the time of the invention to simply substitute one apparatus into the other, or at least combine their respective elements, to achieve no more than the predictable result of a deactivation of deceleration control when pressure is applied to the brake pedal. Doing so would reflect driver intent and safely disengage the cruise control in a downhill travel situation.

Combining prior art elements according to known methods to yield predictable results is a rationale to support a conclusion of obviousness. See MPEP 2143(A).

Simple substitution of one known element for another to obtain predictable results will support a conclusion of obviousness. See MPEP 2143 (B).

Regarding claims 3, 4, 11, and 12, as cited above Bellinger discloses that the algorithm execution continues at step 108 where control computer 12 is operable to control wastegate 34 to thereby set turbocharger boost pressure at its maximum allowable value and to control engine brake unit 42 to provide for maximum engine retarding torque. As described with respect to FIGS. 2 and 3, control computer 12 is thus operable at step 108 to provide for an aggressive engine braking strategy by controlling both wastegate 34 and engine brake unit 42 to produce a maximum engine retarding torque. Following step 108, control computer 12 is operable at step 110 to monitor current engine or vehicle speed (CS). Thereafter at step 112, control computer 12 is operable to determine whether CS is increasing. If so, control computer is operable at step 114 to activate the service brakes 52, at step 116 to perform an automatic downshift to a numerically

lower transmission gear, in a well known manner, at step 118 to again monitor CS, and at step 120 to determine whether if CS is still increasing. Preferably, anytime control computer 12 is operable to activate the service brakes 52, such as at step 114 of algorithm 100, control computer 12 is operable to activate the service brakes 52 only to the extent necessary to slow the vehicle to the highest vehicle speed necessary to conduct an automatic downshift. In this manner, service brake wear is minimized and engine speed is returned, after the downshift, to an engine speed (typically referred to as governed speed) at which the retarding capacity of engine brake unit 42 is most efficient. If, at step 120 control computer 12 determines that CS is still increasing algorithm 100 loops back to step 114 for another automatic downshift sequence. If not, and if CS is not increasing at step 112, algorithm execution continues therefrom at step 122 (para 0050).

Regarding claim 5 and 14, and in addition to that which is cited above, Bellinger discloses that control computer 12 may be operable at step 210 to determine a steepness or slope of the negative grade in accordance with any of the techniques described hereinabove, wherein control computer 12 is subsequently operable at steps 212-216 to determine a desired deceleration rate based on the steepness of the negative grade rather than on the speed error shown in step 210 (para 0067).

Regarding claim 6, the combination teaches when the target vehicle speed (auto -cruise speed) VO is set by turning on the main switch 1 and the set switch 2 as mentioned above, the electronic controller 3 first selects a control mode to be employed for the vehicle speed control. FIG. 2 shows a process for a control mode selection executed by the electronic controller 3. First,

the electronic controller 3 calculates current vehicle speed V, based on the signal from the vehicle speed sensor 4, to calculate vehicle speed deviation .DELTA.Vk (=VO-V) between the target vehicle speed VO and the vehicle speed V (Step S1). Then, in Step S2, the electronic controller 3 determines whether the absolute value of the vehicle speed deviation .DELTA.Vk is greater than a predetermined threshold value .DELTA.VKP (e.g., 8 to 3 km/hr). If the absolute value is greater than the threshold value .DELTA.VKP, the program proceeds to Step S3 to carry out a P (constant acceleration) control (see Kawano at column 8 lines 27-43).

Thus, it is taught controlling the speed of the vehicle when the deviation is between 5 and 10 km/h.

Regarding claim 13, Bellinger discloses that the system 10 includes a number of sensors and other electronic components operable to provide control computer 12 with operational data related to engine 14 and/or the vehicle carrying engine 14. For example, engine 14 includes an engine speed sensor 20 (ESS) electrically connected to input IN1 of control computer 12 via signal path 22. In one embodiment, ESS 20 is a Hall effect sensor, although the present invention contemplates that sensor 20 may be a variable reluctance or other known sensor or sensing system operable to determine engine rotational speed and provide an engine speed signal corresponding thereto on signal path 22 (para 0028).

Thus, it is disclosed an engine controller configured to measure the engine speed.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to JONATHAN M. DAGER whose telephone number is (571)270-1332. The examiner can normally be reached on 0830-1800 (M-F).

If attempts to reach the examiner by telephone are unsuccessful, the examiner’s supervisor, Jack Keith can be reached on 571-272-6878. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

JD
27 September 2010

/JACK KEITH/
Supervisory Patent Examiner, Art Unit 3663